

# Ingula

## Pumped Storage Scheme

**Nonhlanhla Shezi**  
**Visitors Centre Officer**

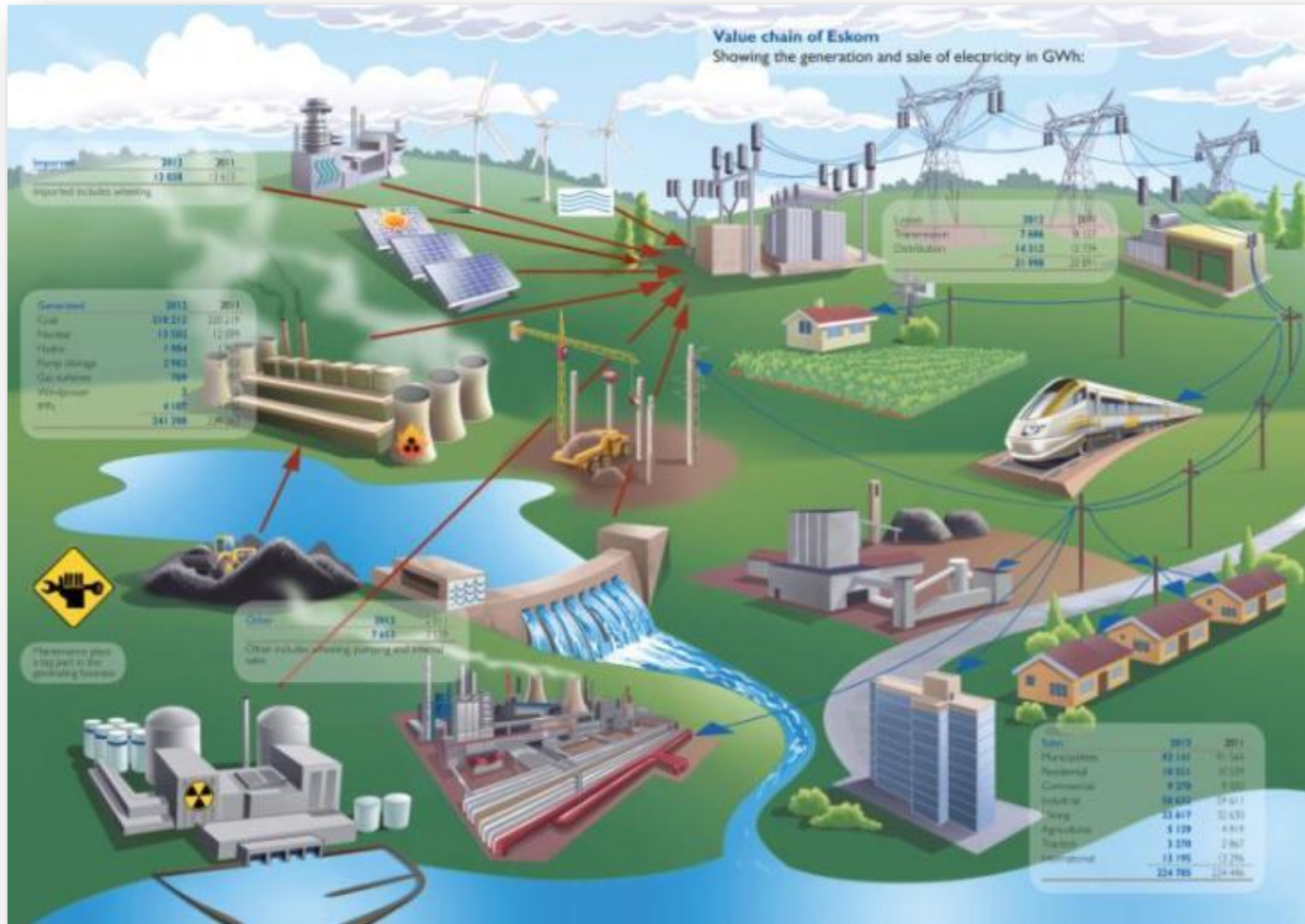


# The face of Eskom



# What we do – our value chain

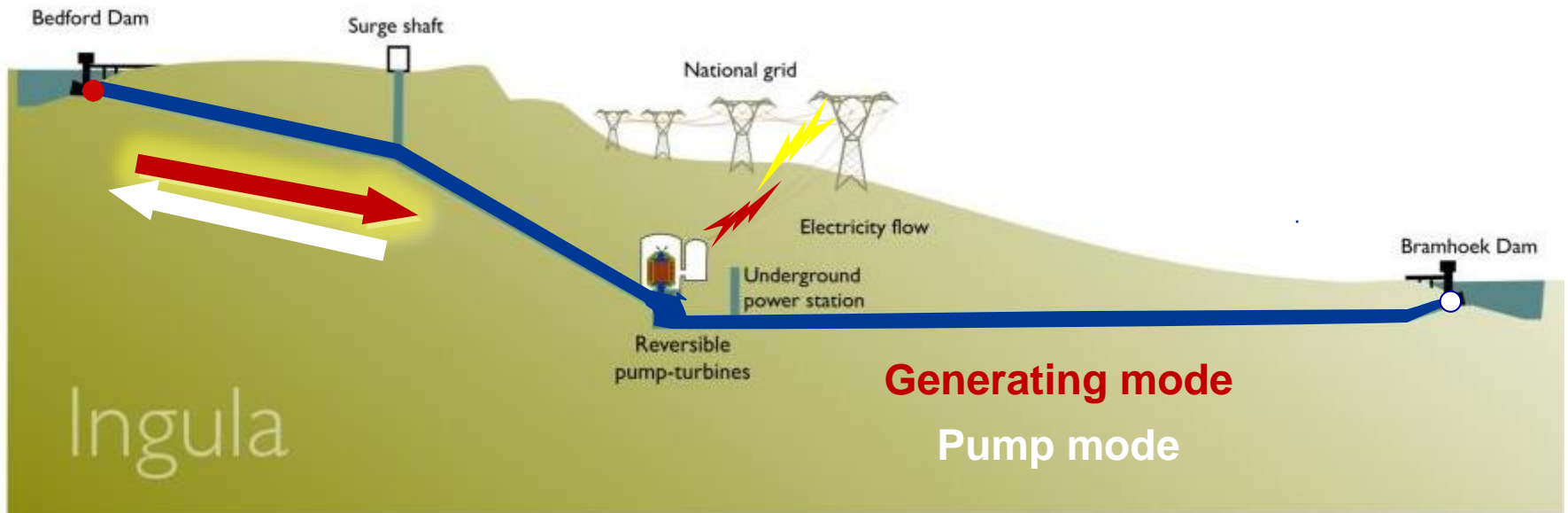
## Generation, Transmission and Distribution Business Divisions



# Ingula



# Ingula operation



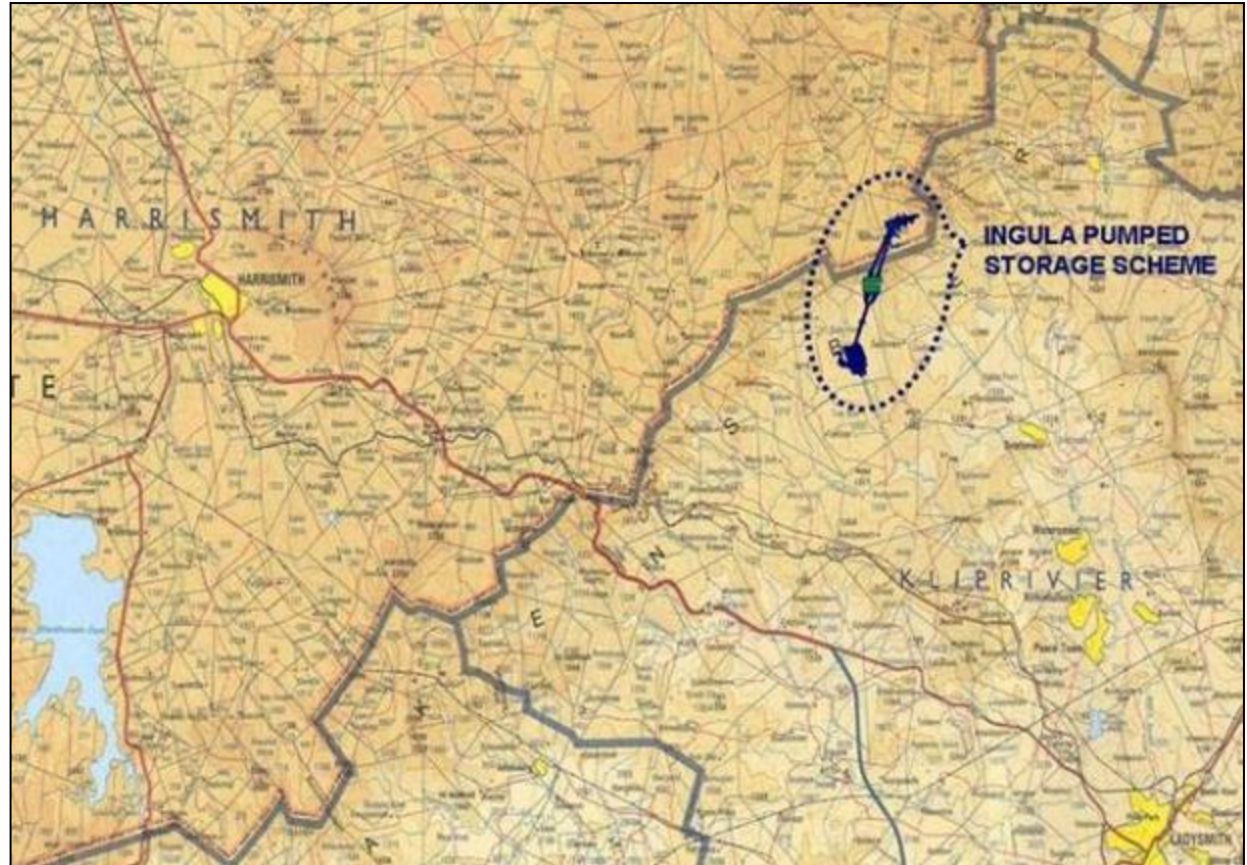
- 4 units of 333 MW each = 1332 MW
- Rated head: 441 m
- Distance between two reservoirs: 4,6km
- Energy storage capacity: 16 hours (21 000 MWh)
- Construction started in 2006

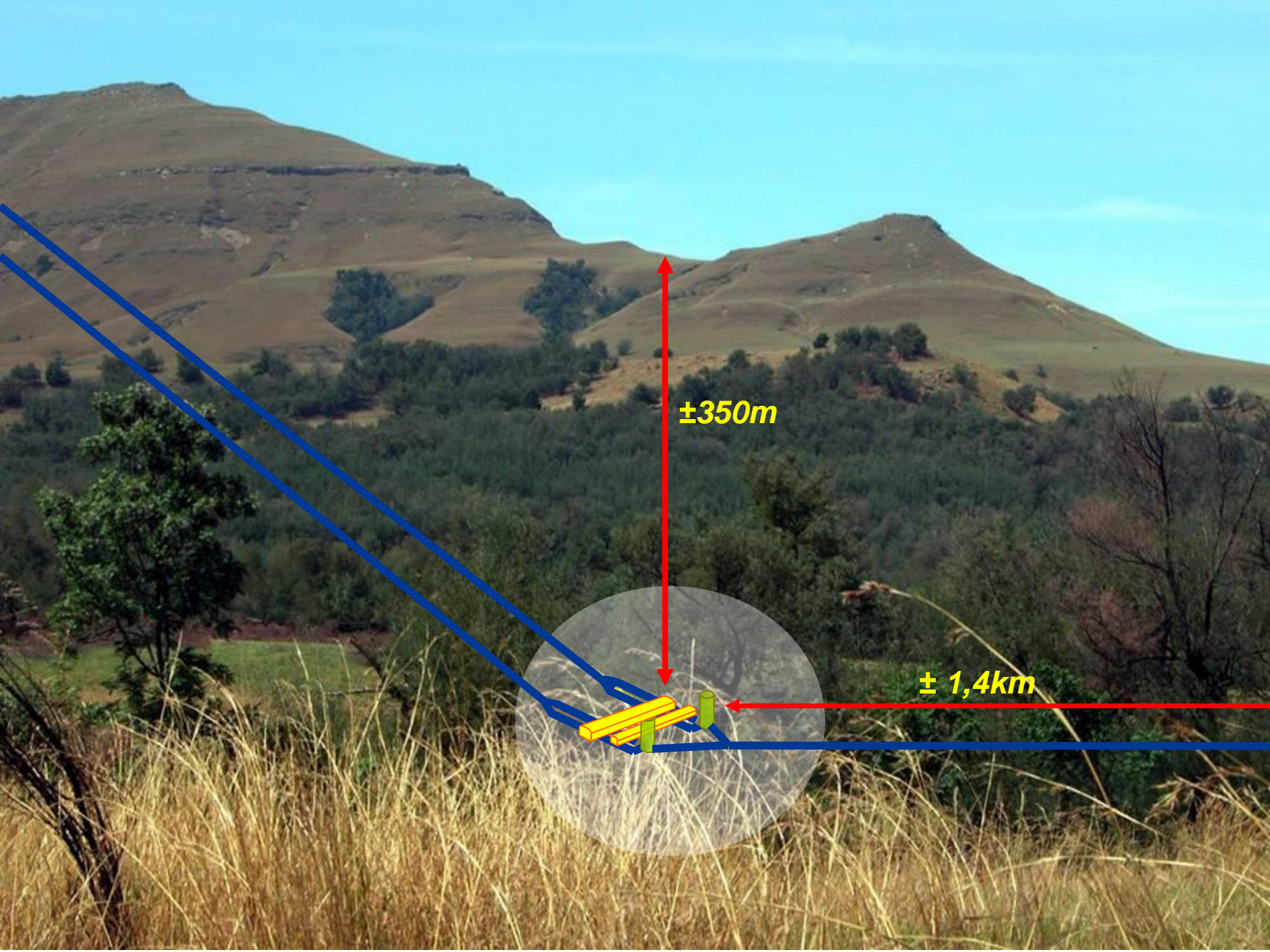


- 19<sup>th</sup> largest pumped storage scheme in the world
- Power station: equivalent of a 116 stories beneath the surface
- Machine hall: largest cavern in mud rock
- 16km of tunnels (8 km of waterways)



# Ingula





$\pm 350m$

$\pm 1,4km$

# Upper reservoir - Bedford Dam



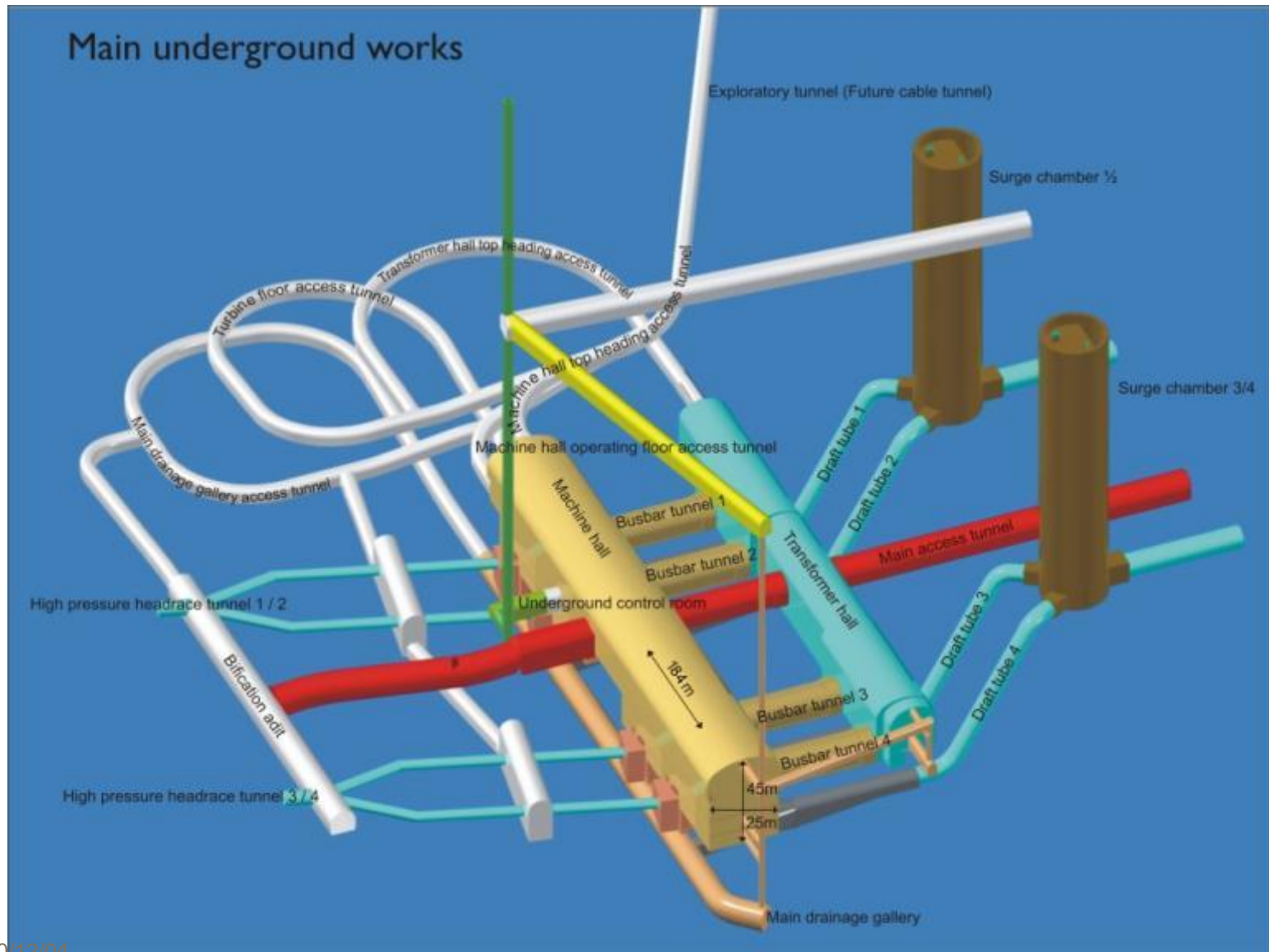
# Intake canal



# Waterways



# Underground power station



# Machine Hall



# Machine Hall



# Machine Hall: Rotor and stator



02/06/2015 12:17

# Machine Hall: Turbine shaft



# Machine Hall: Spiral casing

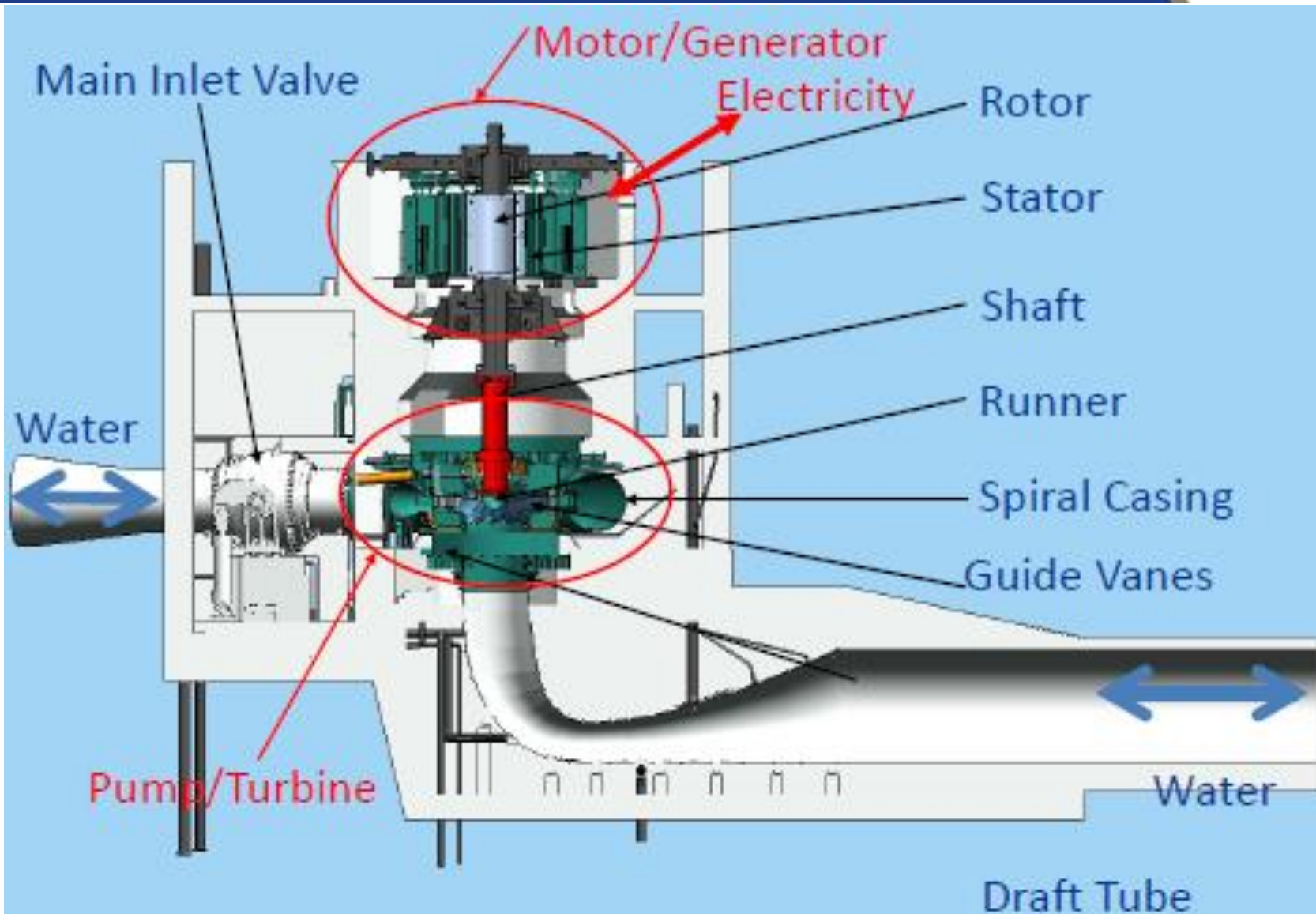


# Machine Hall: Turbine runner



13/10/2014 16:42

# Pump/turbine unit



# Tailrace tunnel



# Outlet into Bramhoek Dam



# Bottom reservoir – Bramhoek Dam



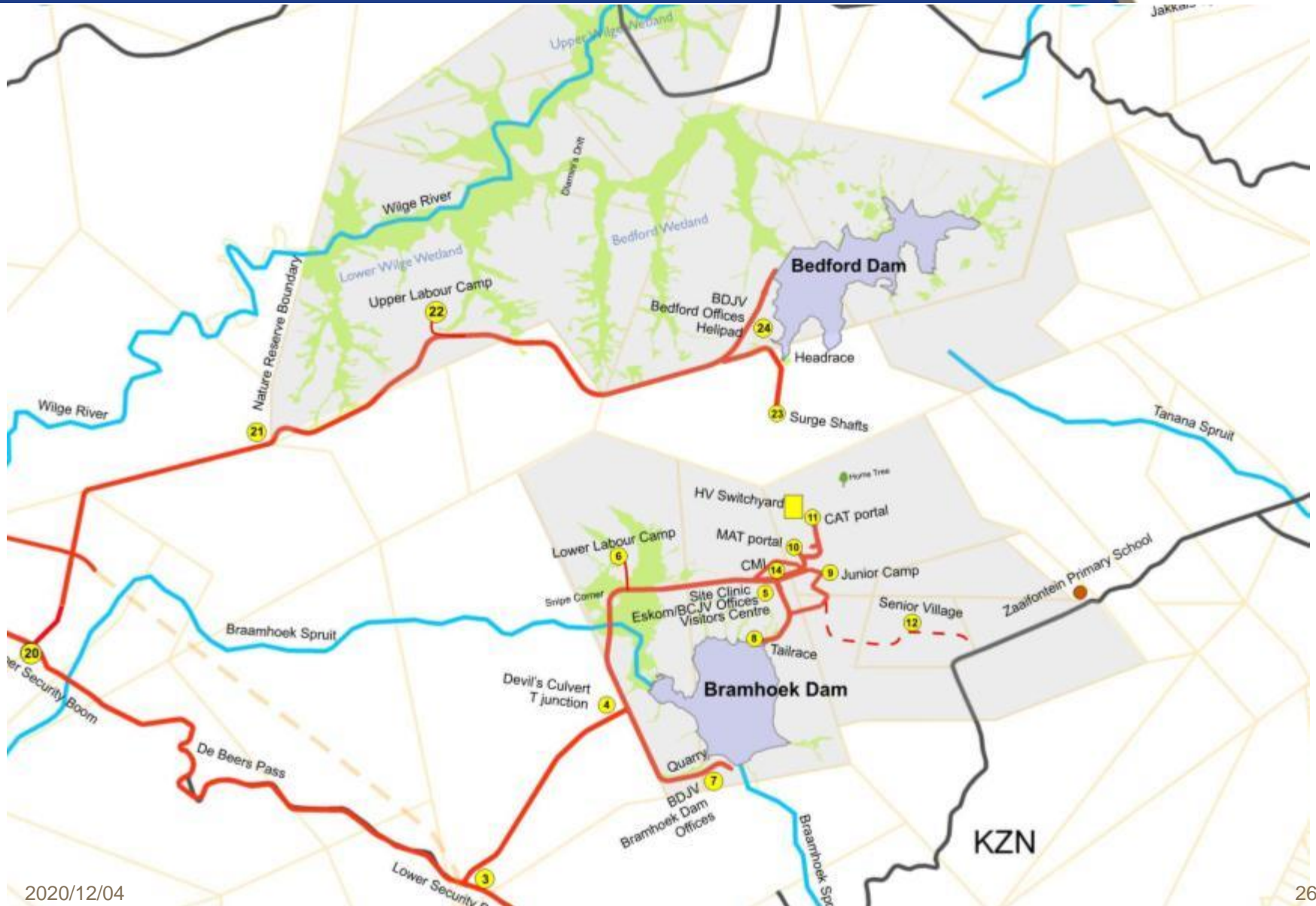
# Bottom reservoir – Bramhoek Dam





# Environmental value

# Conservation area



# Environmental value



8 000 hectares

## High altitude grassland



**Wetlands 1 000 hectares**



**341 bird species**

## 22 threatened species

- Near-threatened - 7
- Vulnerable - 11
- Endangered - 8
- **Critically endangered - 3**





# Fossil finds



# Fossil discovery

**255 million years old  
(Permian period)**



# Dicynodonts

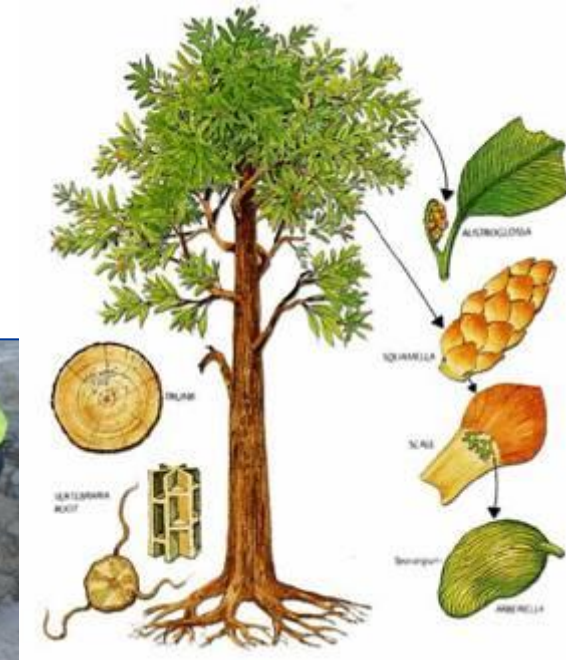


# Gorgonopsians



# Plant fossils - Glossopteris

Woody, seed-bearing shrubs or trees, some growing 30m tall in very wet soil conditions.



# Corporate Social Responsibility



# Social responsibility



**R7 million on schools in the area**

# Farm dweller resettlement

22 farm dweller families



# Visitors Centre



# Visitors Centre

## Contact details:

Nonhlanhla Shezi

Tel. number: 036 342 3236

Email:

[Ingulavisitorscentre@eskom.co.za](mailto:Ingulavisitorscentre@eskom.co.za)

- Anyone welcome
- Book in advance
- Free of charge





Thank you